

REMARKS

Claims 1, 2 and 5-12, 15-21 are active in this application.

Applicants respectfully request reconsideration of the application in view of the following remarks.

The objection to the specification is traversed. The Examiner has requested a substitute specification in proper idiomatic English. However, upon review of the specification, it appears that the specification is overall in good English. The Examiner is requested to specifically point out where he believes improper English has been used. In absence of a specific indication, it is believed that no substitute specification is necessary.

The objection should be withdrawn.

The Examiner has now rejected claims 1, 2, 5, 7, 9-12 and 15-20 has being obvious over JP 06207079. In addition he has rejected claims 6, 7 and 21 over JP 06207079 and Hintze-Bruning (US 5,817,370). Finally claim 8 is rejected over a combination of JP 06207079 and Usui (US 6,800,688).

The rejections of the claims over JP 06207079 and Hintze-Bruning (US 5,817,370) and Usui (US6,800,688) are traversed.

The present invention as set forth in **Claim 1** relates to a modified polyolefin resin produced by

subjecting a polyolefin resin (A) to a graft modification by vinyl monomer(s) (B) comprising **4-t-butylcyclohexyl acrylate**;

wherein the vinyl monomer(s) (B) comprises no unsaturated carboxylic acid or its anhydride.

JP 06207079 (JP'079) discloses **4-t-butylcyclohexylmethacrylate** as a methacrylic ester. In addition, JP' 079 also discloses that methacrylic ester is polymerized in the presence of a rubber polymer (olefin rubber). However, JP '079 does not disclose 4-t-butylcyclohexylacrylate.

In contrast, the present invention relates to a modified polyolefin resin produced by graft modifying the vinyl monomer (B) comprising **4-t-butylcyclohexylacrylate** in the presence of the polyolefin resin (A).

In addition, the Examples in the present invention show that **4-t-butylcyclohexyl acrylate is superior compared to 4-t-butylcyclohexyl methacrylate**, for example in terms of adhesion peel strength.

The Examiner does not find the examples in the specification persuasive. Regarding the first part of Table 1 at page 35 of the specification, he mentioned that identical results are shown for Examples 2 and 5. He compares Examples 2 and 5; and 3 and 7. In particular, the comparison between Examples 3 and 7 appears to be inappropriate as the compositions are somewhat different and a direct comparison cannot be made.

The Examiner further asserts a lack of a comparative example between methacrylate ester and acrylate ester.

JP 06207079 discloses the thermosetting resin composition in which both the polymers (A) and (B) contain a methacrylate as a main component. In contrast, 4-t-

butylcyclohexyl acrylate, which is used in the present invention, is an acrylate, not a methacrylate.

JP 06207079 limits methacrylates, and does not disclose and suggest the usage of an acrylate. Therefore, the applicant believes the present invention is not easily achieved from JP 06207079.

When effects obtained by 4-t-butylcyclohexyl acrylate and other copolymer are compared in Table 1, it is considered reasonable and proper to compare effects obtained by the content ratio in polymers containing the same components.

JP 06207079 relates to the resin composition containing a methacrylate, Examples of a methacrylate include “4-t-butylcyclohexyl methacrylate” and “cyclohexyl methacrylate”. The resin composition containing “4-t-butylcyclohexyl methacrylate” or “cyclohexyl methacrylate” is Example 5 or 7, respectively. Example 2 has the identical composition to that of Examples 5 and 7, except that “4-t-butylcyclohexyl, acrylate” is used.

The adhesion peel strength using test piece (2) in Examples 2, 5, and 7 is 0.87, 0.67, and 0.66, as shown in Table 1. The adhesion peel strength (0.87) in Example 2 is about 1.3 times as large as the adhesion peel strength (0.67) in Example 5. This is a unique effect. Therefore, the applicant believes that the present invention has inventive step over JP 06207079.

In addition, the comparison between the adhesion peel strength in Examples 10 and 13 corresponds to the comparison of effects obtained between “4-t-butylcyclohexyl acrylate” and

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“t-butyl methacrylate”. The adhesion peel strength using test piece (1) is respectively 1.39 and 1.10 in Examples 10 and 13. The adhesion peel strength (1.39) in Example 10 is about 1.3 times as large as the adhesion peel strength (1.10) in Example 13. This effect is distinguished.

In order to provide a clear comparison, **a revised Table, (rearranged Table 1)** is shown below. All data are as in the specification.

	PEB	SEBS	EPR	PB	tBCHA	tBCHMA	CHA	CHMA	tBMA	IBXMA	MMA	4H BA	MAA	BDMA	Test piece (1)	Test piece (2)	Others		
1		70			9					21					1.48	0.52			
2		70			9					18	3				1.43	0.87			
16		70			9					17	3				1	1.43	0.78		
5	*	70			9					18	3				1.38	0.67			
6	*	70								18	3				1.38	0.81			
7	*	70							9		18	3				1.33	0.66		
8	*	70								9		18	3			1.39	0.78		
18	*	70								9		17	3			1	1.40	0.75	
9	*	70								9		18	3				1.37	0.72	
10		45	15		30						10					1.39	0.86		
17		45	15		29						10					1	1.30	0.79	
12	*	45	15			30					10					1.09	0.81		
13	*	45	15				30				10					1.10	0.82		
19	*	45	15					29			10					1	1.25	0.72	
14		45	15						30			10					0.65	0.83	
15		45	15							29			10				0.68	0.79	
11		35	35								10					1.32	0.91		
3		20									19	1				0.54	0.78		
4			20								19	1				0.59	0.64		
20		70			9					18	3				1.49	0.88	Aqueous solvent		
21		45	15		30						10					1.33	0.89	Aqueous solvent	
22		70			18						9	3				1.48	0.82	No solvent	
Comparative Example 1		70									30					0.26	0		
Comparative Example 2															0.21	0	Melt and mixed		

As shown in the specification of the present invention, Table 1 (at page 36 of the specification), the modified polyolefin resin which is produced by using 4-t-butylcyclohexylacrylate (Example 2) has superior properties to those of the modified polyolefin resin which is produced by using 4-t-butylcyclohexylmethacrylate (Example 5). For example, the adhesion peel strength of Example 2 is larger than that of Example 5.

Accordingly, the present invention is different from and not obvious over JP '079.

Hintze-Bruning discloses the use of 3 to 50 % by weight of an unsaturated carboxylic acid such as acrylic acid, methacrylic acid or mixtures thereof. See col. 1, lines 40-42, component (a1). 3 to 50 % by weight of an unsaturated carboxylic acid MUST be present in the binder of Hintze-Bruning. In contrast, the present invention explicitly excludes the use of unsaturated carboxylic acid or its anhydride. There is no suggestion or motivation in Hintze-Bruning to exclude the use of unsaturated carboxylic acid.

Usui (US 6,800,688) fails to disclose or suggest the use of 4-t-butylcyclohexyl acrylate.

Applicants previously distinguished from Usui by claiming that monomer (B) comprises no unsaturated carboxylic acid or its anhydride. As a result the rejection over Usui was withdrawn. Usui also fails to disclose or suggest the use of 4-t-butylcyclohexyl acrylate.

Thus, Hintze-Bruning (US 5,817,370), and Usui (US 6,800,688) do not cure the defects of JP 06207079.

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Thus, the rejections of the claims over JP 06207079 and Hintze-Bruning (US 5,817,370) and Usui (US6,800,688) should be withdrawn.

This application presents allowable subject matter, and the Examiner is kindly requested to pass it to issue. Should the Examiner have any questions regarding the claims or otherwise wish to discuss this case, he is kindly invited to contact Applicants' below-signed representative, who would be happy to provide any assistance deemed necessary in speeding this application to allowance.

Respectfully submitted,

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